

Case 1: Australia Conrad Jupiters

**COMMONWEALTH OF AUSTRALIA**

Copyright Regulations 1969

**WARNING**

This material has been reproduced and communicated to you by or on behalf of Southern Cross University pursuant to Part VB of the Copyright Act 1968 (the Act).

The material in this communication may be subject to copyright under the Act. Any further reproduction or communication of this material by you may be the subject of copyright protection under the Act.

**Do not remove this notice.**



**AUSTRALIA CONRAD JUPITERS:  
Recycling and Waste Management Program**

By

**Paul Nelson**  
Hotel and Jupiters Casino, Gold Coast, Australia

**The International Association of Hotel Management Schools (IAHMS)  
Easter Conference  
Brisbane, Queensland, Australia  
24 – 26 March 1997**

**The hospitality industry in an age of environmental concern**

## EXECUTIVE SUMMARY

Conrad Jupiters Hotel and Casino is a 609 room, full service, four star entertainment complex. It incorporates a hotel, public casino, conference centre, showroom, fitness centre, large gardens, a swimming pool and spas. The operation employs around 2500 staff. The hotel has 10 bars, 7 kitchens, 6 Restaurants, 24 hour Room Service, a Nightclub, and one of the largest in-house laundry's in Australia. It is situated on Broadbeach Island, on Queensland's Gold Coast, and is surrounded by the Tallebudgera Creek, and canals that feed into the Gold Coast's main river system, the Nerang river.

Energy and Waste Management was a low priority during construction of the building in 1985. This has resulted in the company adding energy and waste management systems to its existing plant to conserve natural resources and energy, while maintaining expected levels of guest satisfaction. Interest in energy & waste management has grown over the years, with the property the centre of an intensive recycling/waste minimisation program since 1994. The results have been many, including substantial savings in water waste, a renegotiation of the solid waste contract, the implementation of a recycling program for all glass, paper, cardboard, and plastic and a comprehensive training and awareness program of environmental and waste issues with all staff.

The results of the recycling/waste management minimisation program over the last three years at Conrad Jupiters has represented a significant gain in overall environmental responsibility and the complex will continue to provide a leading bench mark for waste management in Hotel Operations.

## ENVIRONMENTAL COMMITTEE

In June 1995, after six months of development, Conrad Jupiters finalised its *Environmental Policy, Practices and Procedures Manual*. The result was the implementation of the Executive Environmental Committee (EEC) and the Facility Environmental Committee (FEC), two key components of the organisation's environmental policy. The aim of these two committees is to undertake proactive environmental measures throughout the facility and to guarantee compliance with the Environmental Protection Act 1994 (EPA). The EEC meets bi-monthly, with the FEC meeting monthly.

The focus for the FEC is both the EPA and broader environmental issues concerning the complex including;

- Waste Management
- Energy Conservation
- Quality of Air in the Casino
- Noise Pollution
- Water Conservation

### Waste management

In 1994 Conrad Jupiters commissioned the Department of Chemical Engineering of Queensland University to conduct an effluent and wastestream audit and to recommend "best practices". Major trade waste problems from the use of in-sink garbage grinders were identified, with excessive oil and grease, BOD and suspended solids causing a temporary disturbance to the local treatment works. With the property facing huge fines for exceeding licensed discharge limits, a

full audit of waste generation was conducted. The audit highlighted numerous environmental issues including:

In-sink garbage grinders being used extensively, despite policies and procedures for the kitchen areas.

- No facilities for recycling glass, paper, cardboard or plastics.
- A lack of knowledge of the costs involved in waste management from the staff responsible.
- The general staff and chefs accusing each other of dumping waste.
- tonne garbage bins emptied every second day, whether they were full or not.
- Extreme interest and full cooperation from all staff.

The Audit resulted in Hotel Management making significant recommendations, all of which resulted in a number changes to policies and procedures, as well as providing notable improvements in overall environmental obligations.

- All garbage grinders were removed from the property which resulted in the oil and grease, BOD and suspended solids dropping to domestic levels; a \$17,000.00 saving on license fees; a \$350,000.00 saving on capital works to the grease trap system and the avoidance of any fines for exceeding discharge licence limits.

Recycling was instituted. An in house waste audit indicated a total of 32 tonnes of waste was collected by the staff every week, the breakdown being :

7.56 tonne recyclables (glass, aluminium, plastic, tin),  
5.38 tonne cardboard,  
7.36 tonne compostable organic wet waste, (food ect)  
11.86 tonne landfill material.

All glass, aluminium, plastic, and tin were contracted to be picked up by the local waste contractors.

- A composting program was trailed by Paul Anderson from Industrial Microbiology & Environmental Management Services. This was a result of the 7 tonne of wet waste that was previously being disposed of through the food disposal units each week, now going into the compactor. The trails were very favourable with current operational costs the only drawback.

The 12 tonne of recyclable materials are removed daily and processed by recognised commercial companies. The remaining 20 tonne of waste is used as landfill, removed from the property by waste contractors 3 times a week. With the contractors charging compactor pickup fees of \$134.00 per lift, a landfill fee of \$48.00 per tonne, the company was paying \$104,000.00 per annum in waste removal. Through the implementation of a recycling programme the cost was reduced to \$69,500.00, representing an overall saving of \$34,500.00 per annum.

### Energy conservation

After ten (10) years of operations the Hotel Complex has undergone many modifications to improve its energy management due to technology improvements in lighting and the way lighting is controlled. To begin, in 1992 after an energy audit, many areas were highlighted as having potential energy savings improvements.

One area with glaring possibility was our three levels of covered car parks. From day one, we had 1,200 x 65 watt fluorescent batten light fittings running 24 hours a day to provide car park

lighting. Due to the construction of these fittings, they carried an extreme maintenance cost as well as a total power loading on our building of 89.38 kilowatts at 53,200 and annual maintenance cost of approximately \$30,000. After reviewing alternate fittings, a 70 watt high pressure sodium fitting would replace the existing fluorescent lights from 1,200 units to 589 fittings, providing the same luminous coverage. Total purchase and installation cost of the \$210,000, meaning a nett saving in power of \$23,767 per year and only \$1,200 per year in maintenance costs.

Other areas of energy savings have been to install silverlux reflectors to our twin and triple ceiling fluorescent lights throughout the back of house areas, reducing 200 x 4 foot fluorescent lights at 53 watts each at 10.6 kilowatt of reduced building load.

In more commercial areas, 300 amp convention ovens have been replaced by gas and steam power to reduce consumption and improve cooking productivity.

Arrival lighting and lobby lighting is another area of common sense power saving which involved removing some 300 strip lights at 240 volt 30 watts each and replaced with 36 watt single colour corrected fluorescence which reduced two factors.

1. The total circuit loading from 9 kilowatts dropped to 2.8 kilowatt, and
2. The heat load on the area increased our cooling capacity from the air conditioning units in the area.

With the removal of the incandescent lights we instantly reduced our lamp stocks by 800 units as these lamps were fully imported by us from the UK at the cost of \$3.25 each. These having an average lamp life of only 300 hours, meant a yearly outlay of over \$28,470 and the average power consumption of \$3,942. With the implementation of the 36 watt fluoroscents our costs dropped to \$140 per year lamp replacements and \$1,253 in power.

In regards to heavy loads such as our main chiller plant, we are introducing a new strategy of control which will load shed our 680 kilowatt drive motors when the building demand reduces or is about to reduce, for example when the showroom finishes, the air conditioning load decreases rapidly, so a stage of temperature reset controls will be employed to back the chiller plant down and finally switching off at a prescribed load. This type of control also reduces our power fluctuation which cause us to exceed maximum demand which increases our power bill from an average of 5 cents a kilowatt to \$17.00 a kilowatt over our day time consumption average.

With continual improvements in the electronic control product field, we will be continuing to monitor the latest technology to further reduce our electrical consumption with a view to reducing our annual power bill, which at the moment annually costs us \$2.5 million by another \$200,000 - \$250,000 by the year 2000.

### **Quality of air in the casino**

The removal of cigarette smoke and odour from the two main Casino gaming floors has been a priority for Conrad Jupiters since opening day and considerable research and effort has been expended upgrading the air conditioning and smoke reduction facilities at a cost of over \$668,000.00. With occupational health and safety an issue that has come to the fore in recent years, particularly given the legal responsibilities of employers to provide a safe working environment, these measures have progressively lowered smoke levels to less than a third of those estimated to have occurred when the complex opened in 1985.

## Noise pollution

Early in 1992, the licensing division of the Department of Tourism, Racing and Sport issued an order to Conrad Jupiters requiring that they control entertainment noise emanating from the complex. They had received complaints from a number of residents over a lengthy period and following sound level measurements, decided that the levels were excessive under the terms of the Queensland Noise Abatement Act. Noise tests were commissioned by Conrad Jupiters and it was decided that by effective management of the functions, a suitable compromise could be achieved for both the operators of the complex and the residents. The company has installed a noise data logger on the wall of the Main security control room which is calibrated at a predetermined dB level. If noise levels around the complex exceed the set level, a red light will be displayed in the control room, indicating the noise levels are too high. In late 1995 an acoustic sound barrier was built around the complex at a cost of \$109,000.00. This resulted in a 10% reduction of traffic noise at our outer boundaries. Speed bumps have been installed to reduce traffic speeds to 15 km/h.

## Water conservation

The average water consumption for the complex is 7600kL per week. In 1994/95 the total water consumption for the complex was 374,205,000 litres at a cost of \$289,290.00. A further cost of \$77,106.00 was attributed to trade waste.

### *The platypus water & energy conservation systems*

An energy and water conservation system was installed in the guest rooms in 1992 to alleviate the regular temperature fluctuations that were occurring in the showers. With a very large conference centre, the property would often have hundreds of guests simultaneously operating showers, baths, toilets, and taps after a day at their respective conferences. These fluctuations resulted in around two or three guest complaints per day. Add to this, a high percentage of Asian guests who fully utilise the hot water facilities and the need to reduce the hot water flow to ensure that water demands could be fully met at all times became paramount. Guest comfort is of chief importance to Conrad Jupiters and it was feared that long term guests would be lost to water problems, temperature fluctuations, and potential hot water shortages. The energy and water conservation system was installed into the guests rooms in 1992 at a cost of over \$180,000.00 of which \$34,000.00 accounted for the filtration system. With the system installed in the guest rooms, the kitchens were installed with a similar system in 1994 at a cost of \$15,000.00. A substantial cost saving, of approximately \$34,000.00 came from being able to make use of the existing filtration system.

### *Zip infrared urinal system*

In early 1995 the company began trialling an infrared water saving system for urinals. The aim of the trial was to reduce the complex's water consumption, and provide a more effective service to both hotel guests and casino visitors. Conrad Jupiters now has the infrared system throughout the six public toilet areas and will eventually incorporate the two staff toilet blocks. The total cost of the system so far is around \$35,000.00 and will not require any extra costs for maintenance. The company is looking at an 18% decrease in water consumption through the use of this system, although payback was not the deciding influence in the installation. The regular maintenance and lack of proper use of the old flusherettes was of more concern as visitors had a tendency not to flush and cause subsequent problems with the system.

The company has learned that there is invariably room for improvement in water conservation efforts while concurrently maintaining the best service standards for guests and visitors alike.

Although to date, we have installed the Platypus water conservation system, the zip infrared urinal system and laundry and swimming pool meters, the exploration of other water conservation measures will persevere. The installation of water meters into the many different areas of the complex in order to monitor water use and detect leaks is next on the agenda. A study into water recycling systems for the laundry, which accounts for approximately 10% of the hotel's water, is also under way. The current use of water in the kitchens is being examined, with the aim of reducing waste by improving operating equipment in the stewarding department.

## EDUCATION AND TRAINING

Staff training programs are an integral part of Environmental and Waste management in the hotel industry. The education can occur through induction training, where staff are briefed on the companies conservation initiatives alongside general policies and procedures. By presenting conservation as an integral part of the companies operation, it will insure staff adhere to current procedures. It was in 1995 when the Support Services Manager and the Assistant Chief Engineer became involved in a Water Conservation Programme on the Gold Coast (WaterWise Gold Coast Hospitality Industry Program). With the Conrad Jupiters Facility Environmental Committee becoming operational around the same time, the involvement of the Director of Human Resources was a vital ingredient in getting a staff training programme underway. The Human Resources Department undertook to incorporate a water waste management segment in the staff induction training program and put up notice boards around the building informing staff of the establishments environmental awareness program. Benefits have included staff empowerment and increased motivation as staff contribute personal values and expertise, increased efficiency in staff and hotel operations, reduced costs for water and energy supplies and facilitation of a continuous improvement scheme amongst front line staff. One such result has been the trailing of tent cards in guests bathrooms encouraging them to be environmentally responsible and to use the towels provided in the rooms more than once.

## CONCLUSION

Conrad Jupiters is confident of the financial benefits of becoming more environmentally friendly. As new technologies are bought on line, financial paybacks will occur in the short, medium and long term. The company also believes there will be non financial benefits as its environmental initiatives come on line and its seen to be a leader in environmental management. The company also hopes to pilot and model environmental initiatives in the tourism and hospitality industry. With projects completed in the complex including:

- The installation of the energy and water conservation systems in the guest rooms, kitchens and toilets.
- The installation of energy efficient lighting in the car parks,
- The refrigeration of the compactor for more efficient waste disposal
- Recycling of cardboard, paper, glass, aluminium and plastic
- Pilot composting programme in conjunction with Queensland University and Rocky Point Sugar Mill
- Removal of the garbage grinders

The company will continue to address environmental legislation as well as be proactive about future issues. It will actively look for opportunities to develop in - house environmental initiatives. With the FEC being a relatively new initiative, a couple of key developments have already emerged. The operation of the FEC enables a united and coordinated organisational



approach to the EPA and environmental issues, and staff and management interest and co-operation in internal environmental issues has increased.

Conrad Jupiters aims to be at the forefront of industry particularly in the areas of air quality, noise minimisation and waste management and is committed to addressing these issues in a focused and coordinated manner.

